

# NASA TECH BRIEF

## *NASA Pasadena Office*



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### Improved Electrical Spot Terminals

#### The problem:

An electrical terminal is needed that will allow modifications and additions to printed circuits without degrading components or materials.

#### The solution:

An improved electrical spot terminal has been developed which can be rigidly attached to a terminal mounting board. The mounting board is bonded to an epoxy board (with a high temperature adhesive) which in turn is bonded to a printed circuit board. A conductive lead is coupled between the electrical terminal and the circuit trace on the circuit board.

#### How it's done:

As shown in Figure 1, the terminal is swaged to the mounting board. A lead with adequate electrical conductivity is properly positioned, and the mounting board is bonded to an insulation board with a high strength, high temperature adhesive.

As shown in Figure 2, the spot terminal assembly is bonded to the circuit board by a bonding agent which is curable at ambient temperatures. The lead is lined up with the circuit trace to provide a solderable joint. After the joint is soldered, the required electrical lead itself is ready to be soldered.

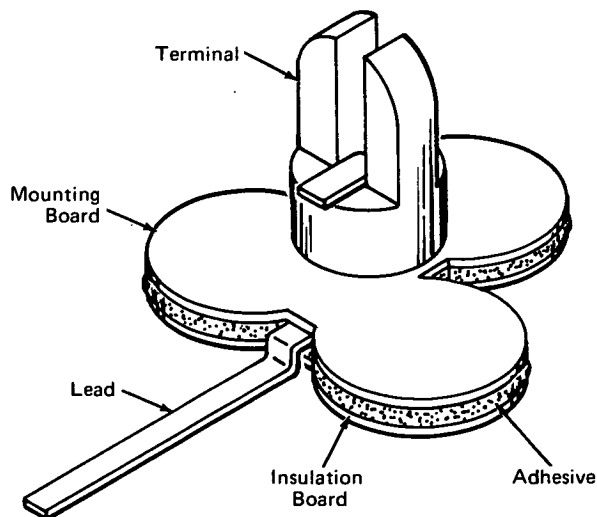


Figure 1. Clover-Leaf Spot Terminal

(continued overleaf)

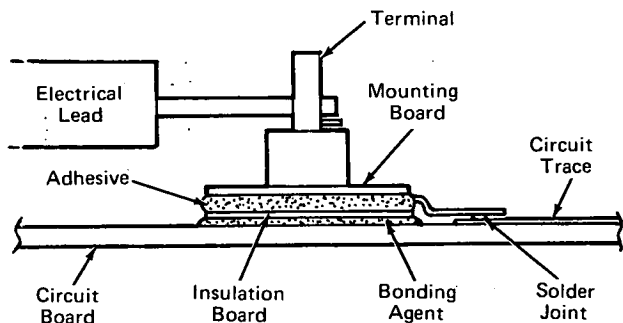


Figure 2.

There is a functional relationship between the sizes and shapes of the various spot terminals. The size is determined by sizing the mounting board to allow sufficient heat dissipation during the soldering operation. The shape is usually clover-leaf. This allows closer placing of the spot terminals within a given area. However, the clover-leaf shape is more difficult to form, and a triangular shape may be utilized where space is not a primary consideration.

#### Notes:

1. This innovation may be used to modify sensitive and high quality equipment to avoid changing the original configuration.
2. Requests for further information may be directed to:  
Technology Utilization Officer  
NASA Pasadena Office (JPL)  
4800 Oak Grove Drive  
Pasadena, California 91103  
Reference: B72-10492

#### Patent status:

This invention is owned by NASA, and a patent application has been filed. Inquiries concerning non-exclusive or exclusive license for its commercial development should be addressed to:

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Source: Charles D. Baker  
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